



PATENT ABSTRACTS OF JAPAN

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(21) Application number: **02229655**(71) Applicant: **KYOCERA CORP**(22) Date of filing: **30.08.90**(72) Inventor: **MURANO SHUNJI**(54) **IMAGING DEVICE**

(57) Abstract:

PURPOSE: To prevent light from being refracted and scattered by air bubbles in a sealing layer and to enhance the performance of an imaging device by a method wherein a photodetector and a light-emitting element are sealed by at least a low- viscosity resin and a lead wire is sealed by at least a high-viscosity resin.

CONSTITUTION: For example, 64 pieces of light-emitting diodes 4 are integrated in a chip 2 of GaAs or the like. Lead wires 6 are bonded to interconnection electrode parts 10 formed at a substrate 8 of glass or the like. A silicone resin is used for a high-viscosity resin layer 14 ; it is coated so as to cover the lead wires 6 from both sides of the array 2. Then, the upper part of each diode 4 is coated with a low-viscosity resin layer 16. After the two resin layers 14, 16 have been coated, they are hardened. After the layers have been hardened, air bubbles are left in the resin layer 14, but are not left around each light-emitting diode 4. The performance of an imaging device is not affected. The lead wires 6 are sealed completely with the resin layer 14. The surface of the resin layer 16 is made smooth by heat generated when the layer is hardened, and light is not refracted at the interface between the resin layer and the air. It

is preferable that the resin layer 14 has a viscosity of 5000C.P. or higher and that the resin layer 16 has a viscosity of 4000C.P. or lower.

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